Gross, M. R. 1979. Cuckoldry in sunfishes (*Lepomis:* Centrarchidae). Canadian Journal of Zoology 57: 1507–1509.

Hazzard, A. S. 1932. Some phases of the life history of the eastern brook trout, *Salvelinus fontinalis* (Mitchill). Transactions of the American Fisheries Society 62: 344–350.

Hobbs, D. F. 1937. Natural reproduction of Quinnat salmon, brown and rainbow trout in certain New Zealand waters. New Zealand Marine Department, Fisheries Bulletin 6: 7–104.

Hubbs, C. L., and **K. F. Lagler.** 1964. Fishes of the Great Lakes region. University Michigan Press, Ann Arbor, Michigan. 213p.

Jones, J. W., and **J. W. Ball.** 1954. The spawning behaviour of brown trout and salmon. Animal Behaviour 2: 103–114.

Miller, R. B. 1957. Have the genetic patterns of fishes been altered by introductions or by selective fishing? Journal Fisheries Research Board of Canada 14: 797–806.

Reiser, D. W., and **T. A. Wesche.** 1977. Determination of physical and hydraulic preferences of brown and brook trout in the selection of spawning locations. Completion report for project C-7002, Water Research and Technology. U.S. Department of the Interior, Water Resources Research Institute, University of Wyoming. 100p.

Schwartz, F. J. 1972. World literature to fish hybrids with an analysis by family, species, and hybrid. Gulf Coast Research Laboratory Museum Publication No. 3. 328p.

Shuman, R. F. 1950. On the effectiveness of spermatozoa of the pink salmon (*Oncorhynchus gorbuscha*) at varying distances from point of dispersal. Fisheries Bulletin 51: 359–363.

Smith, O. R. 1941. The spawning habits of cutthroat and eastern brook trouts. Journal of Wildlife Management 5: 461–471.

Stuart, T. A. 1954. Spawning sites of trout. Nature 173: 354.

Susuki, R., and **Y. Fukuda.** 1971. Survival potential of F1 hybrids among salmonid fishes. Bulletin of the Freshwater Research Laboratory (Tokyo) 21: 69–83.

Susuki, R., and **Y. Fukuda.** 1973. Appearance and numerical characters of F1 hybrids among salmonid fishes. Bulletin of the Freshwater Research Laboratory (Tokyo) 23: 5–32.

Witzel, L. D. 1980. Relation of gravel size to spawning site selection and alevin production by *Salvelinus fontinalis* and *Salmo trutta*. M.Sc. thesis, University of Guelph, Guelph, Ontario. 203p.

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Two Sable Island Fungi, *Peziza ammophila* and *Hygrocybe turunda*, New to Nova Scotia

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Peziza ammophila on dunes and *Hygrocybe turunda* on *Sphagnum* at Sable Island represent the first reports of these fungi from Nova Scotia and the first Canadian record of the *Peziza*.

Key Words: Sable Island, Nova Scotia, fungi, first records, *Peziza ammophila, Hygrocybe turunda*.

During a recent expedition to Sable Island (43° 56′ – 44° 00′ N, 59° 45′ – 60° 05′ W), N.S., to survey the vascular plant flora, the second author collected two fleshy fungi. *Peziza ammophila* Durieu et Montagne was found on the north shore, approximately 200 m east of West Point. It occurred in freshly deposited sand in an open dune sparsely covered with American Beach grass (*Ammophila breviligulata* Fernald). This is the first record of *Peziza ammophila* from Canada. Andersson (1950) gave a detailed account of this fungus with illustrations and mapped its distribution in the northern hemisphere. The first collections from North America (Florida) were described as *Peziza funerata* Cooke (1878). It has since been found on sand dunes in Michigan and in California (Seaver 1930, 1942). It occurs in a number of European countries, the British Isles and Morocco (Andersson 1950), and has been reported from Australia (Seaver 1930), South Africa (Ramsbottom 1926) and Argentina (Singer 1968). In all cases it has been found on shifting sand containing little humic material.

Hygrocybe turunda (Fr.) Karsten was collected on a thin *Sphagnum* cover over wet peaty sand with Large Bog Cranberry (*Vaccinium macrocarpon* Ait.),

rushes (*Juncus balticus* Willd.) and Grass Pink Orchid (*Calopogon tuberosus* (L.) BSP) approximately 150 m N. of the weather station. It was also noted in similar associations at four other localities on the island. This species was not treated in Bird and Grund's (1979) Nova Scotian monograph of *Hygrophorus sensu lato*. In the earlier North American monograph, Hesler and Smith (1963) illustrated and reported it from Idaho, Massachusetts, Michigan, Montana, Oregon and Washington. Hesler and Smith also recorded it (sub *Hygrophorus turundus* var. *sphagnophilus* (Peck) Hesler and Smith) from Newfoundland. We confirmed this identification (see below). Collections from New Brunswick, northern Quebec and northern Ontario which extend the known range have also been seen.

Hygrocybe turunda is characterized by its bright scarlet colours which can fade to yellow, fuscous scales of varying development on the pileus and large spores (see Hesler and Smith 1963) which distinguishes it from the related *Hygrocybe cantharella* (Schw.) Murr. and *H. miniata* (Fr.) Kummer. *Hygrocybe cantharella* occurs in a variety of habitats, almost always with mosses and sometimes on *Sphagnum* of a loose consistency, often in shady coniferous forests. *Hygrocybe miniata* is usually found in hardwood forests on well decayed mossy logs. *Hygrocybe turunda* occurs in open locations on sand or mosses such as *Sphagnum* over sandy substrates, but in New Brunswick it occurred in exposed sites in a raised bog on *Sphagnum* of a compacted form with robust capitulae. This exposed habitat is reflected by its overall distribution. Outside of North America it has been reported from Greenland, Iceland, the Faeroes, parts of northern Europe and Japan (see Hesler and Smith 1963). In more southerly latitudes it is restricted to the higher elevations or other exposed cool sites.

Specimens examined: *Peziza ammophila:* N.S.: Sable Island, Aug. 25, 1981, P.M. Catling & W. Freedman (DAOM 180764). *Hygrocybe turunda:* Ont.: Algoma Dist., L. Superior Prov. Park, Rabbit Blanket L., Sept. 14, 1972, D.W. Malloch 14.9.72.15 (TRTC). Que.: Reserve Chibougamau, 15.75 km N. of Bochart on Hwy. 167, Aug. 29, 1976, J. Ginns & S. Redhead 2092 (DAOM 174756). N.B.: Kouchibouguac Natl. Park, Sept. 24, 1977, S.A. Redhead 2565 (DAOM 166758). N.S.: Sable Island, Aug. 25, 1981, P.M. Catling & W. Freedman (DAOM 180763). Nfld: St. Anthony, Aug. 12, 1951, D.B.O. Savile 2856 & J. Vaillancourt (DAOM 28523).

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Literature Cited

Andersson, O. 1950. Larger fungi on sandy grass heaths and sand dunes in Scandinavia. Botaniska Notiser, Supplement 2: 1–89.

Bird, C. J., and **D. W. Grund.** 1979. Nova Scotian species of *Hygrophorus*. Proceedings of the Nova Scotian Institute of Science 29(1): 1–131.

Cooke, M. C. 1878. Ravenel's American fungi. Grevillea 6: 129–146.

Hesler, L. R., and **A. H. Smith.** 1963. North American species of *Hygrophorus*. University of Tennessee Press, Knoxville.

Ramsbottom, J. 1926. Chapter IX. Special groups of plants. A. Fungi. Pp. 152–173. *In* Aims and methods in the study of Vegetation. *Edited by* A. G. Tansley and T. F. Chapp. British Empire Vegetation committee, London.

Seaver, F. J. 1930. Photographs and descriptions of cup-fungi-XIII. Subhypogeous forms. Mycologia 22: 215–218.

Seaver, F. J. 1942. The North American cup-fungi. (Operculates). Supplemented Edition. N.Y.

Singer, R. 1968. Sand-dune inhabiting fungi of the south Atlantic coast from Uruguay to Bahia Blanca. Mycopathologia et Mycologia Applicata 34: 129–143.

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Note added in proof: *Peziza ammophila* has been reported and photographed in Japan on sand dunes.

Otani, J. 1982. Some notes on two interesting fungi collected in Japan. Transactions of the Mycological Society of Japan 23: 379–384.